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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/830,993   | 05/03/2001  | Junichi Aizawa       | L9289.01134         | 7164             |
| 7590   | 02/13/2004  |                      | EXAMINER            |                  |
| Stevens Davis Miller & Mosher<br>1615 L Street N W Suite 850<br>Washington, DC 20036 |             |                      | PEREZ, ANGELICA     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2684                | ✓                |

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/830,993             | AIZAWA ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Angelica M. Perez      | 2684                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 03 May 2001.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
  - a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Information Disclosure Statement***

1. The information disclosure statement filed on May 3, 2001 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3, 6-7 and 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith (Smith et al., US Patent No.: 6,006,075).

Regarding claims 1, 9, 10 and 11, Smith teaches of a radio communication apparatus, method (figure 1, item 10; column 1, lines 1-17) terminal and base station (column 4 lines 48-52) comprising: a plurality of antennas (figure 1, items 26) each of which transmits a plurality of transmission data items different from each other (column 4, lines 57-63); a switch (figure 1, item 24) that performs a switching operation for sequentially switching the transmission data items to be transmitted from each antenna (column 7, lines 3-18). He also teaches of a converter that converts frequencies of the plurality of transmission data items to respective frequencies different from each other, thereby performing frequency conversion (column 6, lines 57-62; where the "tuning" refers to "converting" the frequency).

Regarding claim 2, Smith teaches all the limitations according to claim 1. Smith further teaches of a storage section (figure 1, item 46) that stores a predetermined switching pattern, where the switch performs the switching operation according to the switching pattern (column 10, lines 57-67).

Regarding claim 3, Smith teaches all the limitations according to claim 2. In addition, Smith teaches where the storage section stores the switching pattern for performing the switching operation between antennas having low correlation with each other (column 10, lines 57-67; where there is a low correlation among antennas transmitting signals at different frequencies).

Regarding claim 6, Smith teaches all the limitations of claim 1. Smith also teaches where the switch performs the switching operation on the plurality of transmission data items subjected to the frequency conversion in the converter (column 11, lines 39-48).

Regarding claim 7, Smith teaches all the limitations of claim 1. Smith also teaches where the switch performs the switching operation on the plurality of transmission data items to be subjected to the frequency conversion in the converter (column 10, lines 57-64).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Kamerman (Kamerman et al.; US Patent No.: 5,164,942).

Regarding claim 4, Smith teaches all the limitations according to claim 1.

Smith does not specifically teach about a counter that counts a predetermined time repeatedly, where the switch performs the switching operation at predetermined time intervals counted by said counter.

Kamerman in related art concerning antenna control for LAN stations, teaches of a chip containing a configurable counter (column 1, lines 40-50; where

the time intervals of the counter can be configured according to the switching operations).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Smith's apparatus with Kamerman's counter in order to achieve a synchronized switching pattern, which enhances the synchronization of transmission.

Regarding claim 5, Smith teaches all the limitations according to claim 4.

Smith does not teach where the counter counts a predetermined time such that a switching pattern repeating period is equal to a time interleaving length

Kamerman further teaches where the counter counts a predetermined time such that a switching pattern repeating period is equal to a time interleaving length (column 1, lines 40-50; where the counter can be configured to and interleaving length equal to the pattern repeating period).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Smith's apparatus with Kamerman's switching pattern repeating period is equal to a time interleaving length in order to enhance the synchronization of transmissions.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Fujita (Fujita, Noriyuki; US Patent No.: 6,128,476).

Regarding claim 8, Smith teaches all the limitations according to claim 1,

Smith does not specifically teach where the converter has a plurality of synthesizers for each antenna, and switches a conversion frequency of a synthesizer while another synthesizer is performing the frequency conversion on transmission data.

Fujita, in related art concerning Transmission of diversity circuits for TDMA radio unit, teaches of a plurality of synthesizers for each antenna, and switches a conversion frequency of a synthesizer while another synthesizer is performing the frequency conversion on transmission data (columns 2 and 3, lines 66-67 and 1-8, respectively).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Smith's apparatus with Kamerman's plurality of synthesizers in order to obtain better signals.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Patent No.: 5,787,122, refers to a method and apparatus for transmitting receiving, encoded data burst signals using a number of antennas.

Patent No.: 6,243,563 B1, deals with a wireless device for high power transmission radio signal.

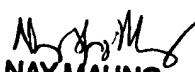
Patent No.: 6,609,010 B1, refers to a dual frequency band transceiver.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Angelica Perez whose telephone number is 703-305-8724. The examiner can normally be reached on 7:15 a.m. - 3:55 p.m., Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service number is 703-306-0377.

  
NAY MAUNG  
**SUPERVISORY PATENT EXAMINER**

  
Angelica Perez  
(Examiner)

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Nay A. Maung  
(SPE)

Art Unit 2684

February 6, 2004